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SOVIET PATENT NO.: 209915

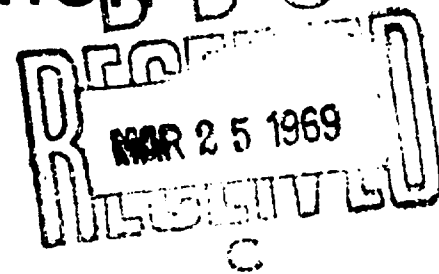
A MANUAL AEROSOL GENERATOR

COUNTRY: USSR

TECHNICAL TRANSLATION D D C

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TECHNICAL TRANSLATION

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SOVIET PATENT NO.: 209915

A MANUAL AEROSOL GENERATOR

Inventors: I. M. Zagorskiy and S. P. Kuchin

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(No. 1020035/30-15)**

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**Assignee: The Leningrad Scientific Research
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SOVIET PATENT NO.: 209915
A MANUAL AEROSOL GENERATOR

Known manual aerosol generators consist of a combustion chamber enclosed in a cooling housing, a device for the preparation of the operating mixture, a starting pump, an ignition system and a supply connection with by-pass valves.

In the proposed generator, the device for the preparation of the operating mixture has a mixing pipe, which is connected to the atomizer, and one end of the pipe is equipped with a diffuser and connected to the combustion chamber; the opposite end is equipped with an air oscillating valve.

For this reason, a higher grade operating mixture preparation and reliable generator starter are provided.

The mouth of the atomizer is situated at right angles to the mixing pipe.

The drawing shows a cross-section of the generator described.

The generator consists of combustion chamber 1, enclosed within cooling housing 2, within which are situated cooling pipes 3, which are connected to the combustion chamber, apparatus 4 for the preparation of the operating mixture, which has mixing pipe 5, connected to atomizer 6. Mouth 7 of the atomizer is connected with mixer 8 and is situated at right angles to the mixing pipe. Axial and radial calibrated openings are provided in the atomizer for fuel atomization. The output end of the mixing pipe is equipped with diffuser 9 and is connected with the combustion chamber; oscillating air valve 10 is installed on the opposite end to provide an air intake during the combustion cycle. The upper part of the mixing pipe is the location of check valve 11, through which exhaust gases pass by means of pipe 12 into the mixer and simultaneously through pipe 13 into fuel tank 14. Under the influence of excess pressure, fuel from the fuel tank passes through pipe 15 to the

atomizer and exhaust gases from valve 11 pass through pipeline 16 to tank 17 for the operating liquid. From this tank the operating liquid passes through pipeline 18 with by-pass valve 19 to nozzle 20, which is installed at the output of the combustion chamber 1. The generator is started by means of starting pump 21 and ignition system 22. In order to protect against overheating of fuel tank 14 and tank 17, protective shield 23 is provided between the tanks and the combustion chamber.

The generator operates in the following manner.

The starting pump delivers the operating mixture to the combustion chamber; the operating mixture is ignited and forms hot gases which create increased pressure. Part of the gases are passed through the check valve and the supply pipe to the operating liquid tank, which provides for delivery of the liquid to the atomizing nozzle. In issuing from the nozzle, the atomized operating liquid is picked up by the flow of hot gases and is converted into an aerosol. Simultaneously another portion of the gases passes to the mixer, and from the mixer to the fuel tank, in which excess pressure is created. Under the influence of this pressure, the fuel is delivered to the atomizer. The preliminary atomization of the fuel occurs under the pressure of the air in the mixer, from which, during the intake cycle, the fuel passes to the axial opening in the atomizer and is carried along by the gasoline passing through the radial openings, and thus forms the operating mixture. A vacuum is created in the combustion chamber in proportion to gas exit from the nozzle, and as a result the air oscillating valve opens and atmospheric air enters the mixing pipe. The air is mixed in the pipe with the previously formed operating mixture and the prepared mixture is directed through the diffuser to the combustion chamber where it is ignited and the operating cycle is repeated.

During generator operation the combustion chamber is cooled under the influence of forced cold air.

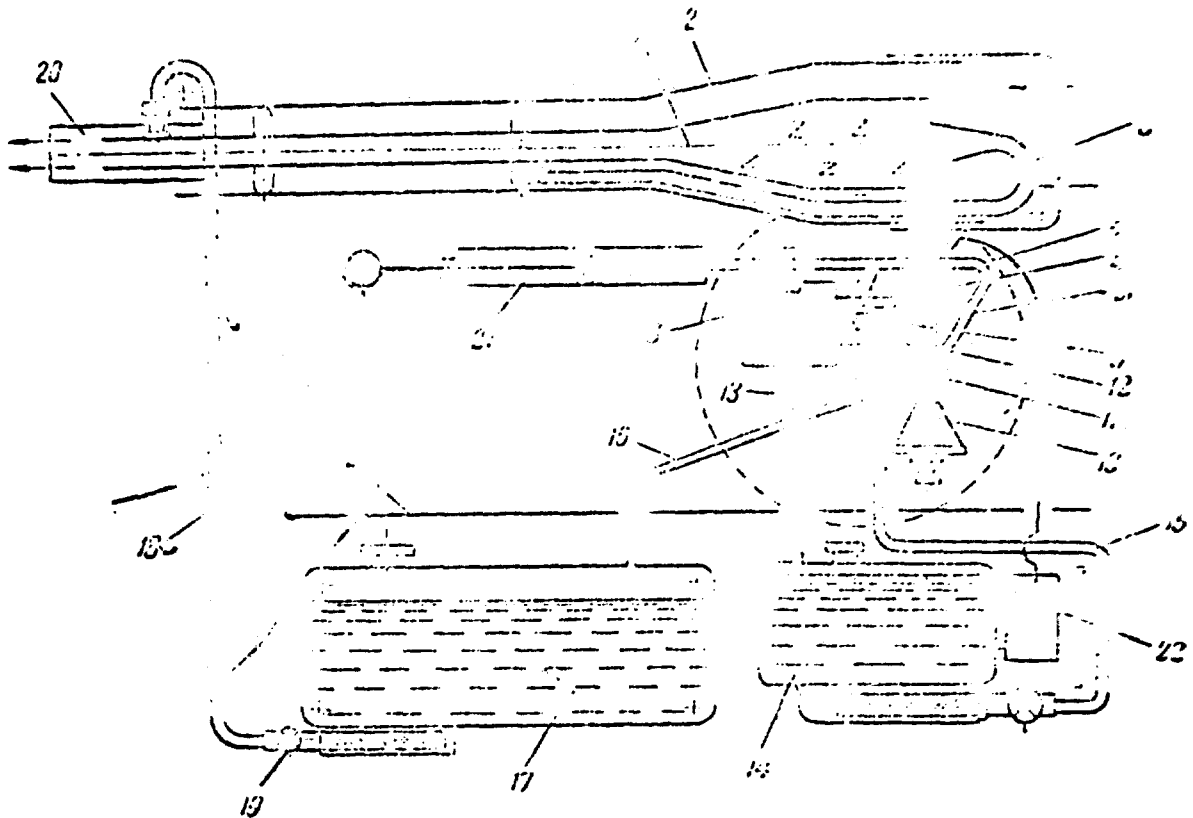
The generator is intended for the processing of forest plantings with insecticides, and also for the struggle with insects and enemies of agricultural growth.

Claims

1. The manual aerosol generator consisting of a combustion chamber enclosed within a cooling housing, a device for the preparation of the operating mixture, a starting pump, an ignition system and a delivery

system with by-pass valves is improved by the fact that, with the purpose of providing a higher-grade preparation of the operating mixture and reliable starting of the generator, the device for the preparation of the operating mixture has a mixing pipe which connects with the atomizer; one end of the pipe is equipped with a diffuser and connects to the combustion chamber, while an air oscillating valve is installed on the other end of the pipe.

2. The generator, as outlined in claim No. 1, is improved due to the fact that the mouth of the atomizer is installed at right angles to the mixing pipe.



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13. ABSTRACT This patent describes an improved manually operated aerosol generator intended for the spraying of insecticides and other liquids. The improvements claimed include high-grade preparation of the operating mixture and reliable starting characteristics.			

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SUPPLEMENTARY

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